

CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD  
CENTRAL VALLEY REGION

ORDER NO. R5-2006-0103

NPDES NO. CA0078921

WASTE DISCHARGE REQUIREMENTS  
FOR  
CITY OF ALTURAS  
WASTEWATER TREATMENT PLANT  
MODOC COUNTY

The Central Valley Regional Water Quality Control Board, (hereafter Central Valley Water Board) finds that:

*BACKGROUND*

1. The City of Alturas (hereafter Discharger) submitted a Report of Waste Discharge, dated 9 December 2004, and applied for permit renewal to discharge waste under the National Pollutant Discharge Elimination System (NPDES) from the Alturas Wastewater Treatment Plant (WWTP) to the Pit River. The Discharger is currently regulated under Waste Discharge Requirements Order No. R5-00-123 (NPDES No. CA0078921), adopted by the Central Valley Regional Water Quality Control Board (hereafter Board) on 16 June 2000.
2. The City of Alturas owns and operates a wastewater collection, treatment, and disposal system, and provides sewerage service to the City. The treatment plant (Assessors Parcel No 022-130-11) is in Section 14, Township 42 North, Range 12 East of the Mt. Diablo Base Line and Meridian, as shown on Attachment A, which is a part of this Order. Treated municipal wastewater is currently discharged, at Discharge Point 001, to the Pit River, a water of the United States. The latitude and longitude of the discharge point, which is immediately downstream of the confluence of the North and South Forks of the Pit River, are as follows:

<u>Discharge Point</u>	<u>Latitude</u>	<u>Longitude</u>
001 (Pit River)	41° 28' 35.23"	120° 32' 27.56"

3. The existing treatment system consists of an inlet screen, inlet Parshall flume, grit removal, comminutor, primary clarifier, aerobic sludge digester, fixed bed trickling filter, secondary clarifier, chlorine contact chamber, dechlorination, outlet Parshall flume and outfall structure. The Report of Waste Discharge and supplementary information submitted by the Discharger characterize the discharge as follows:

Average Monthly Flow	0.389 million gallons per day (mgd)
Maximum Daily Flow	1.2 mgd
Design Flow (existing plant)	0.5 mgd    Average dry weather flow (ADWF)
Design Flow (upgrade)	0.5 mgd    ADWF

<u>Constituent</u>	<u>Average Daily<sup>a</sup> Concentration</u>	<u>Maximum Daily<sup>a</sup> Concentration</u>
BOD <sub>5</sub> <sup>b</sup>	17.0 mg/L	24 mg/L
Total Suspended Solids (TSS)	12.9 mg/L	29 mg/L
Coliform Bacteria	15.7 MPN/100 mL <sup>c</sup>	50 MPN/100 mL

<sup>a</sup> January 2004 through February 2005

<sup>b</sup> 5-day, 20°C biochemical oxygen demand

<sup>c</sup> Average monthly median total coliform (MPN)

4. The Discharger was issued Cease and Desist (C&D) Order No. R5-2003-0128 on 5 September 2003. Order No. R5-2003-0128 required the City of Alturas to cease and desist discharging waste in violation of Waste Discharge Requirements Order No. 5-00-123 (NPDES No. CA0078921). Specifically the Order required the City to submit a report identifying the selected alternative to either upgrading or replacing the treatment plant.
5. The Discharger has been approved for Small Communities Grant funding and has submitted a Phase I plan through their engineering consultant for upgrading the plant which includes: installation of a new operations building; replacement of influent grinder; modifications to Parshall flume; repair of existing clarifier and installation of additional clarifier; improvements to trickling filter including replacement of media, installation of recirculation system and installation of full floor underdrain system; doubling of existing chlorine contact chamber length; installation of sludge drying beds; upgrade of collection system pump stations; slip lining 2,400 feet of sewer line and review modification of chlorination controls. The estimated cost of the improvements is \$1,990,000. If bids come in significantly higher than anticipated the Discharger may postpone the collection system portion of the project. The Discharger is required to complete Phase I improvements by **15 November 2007**.
6. The Central Valley Water Board adopted a *Water Quality Control Plan, Fourth Edition, for the Sacramento and San Joaquin River Basins* (Basin Plan). The Basin Plan designates beneficial uses, establishes water quality objectives, and contains implementation programs and policies to achieve water quality objectives for all waters of the basin. The requirements of this Order implement the Basin Plan.
7. The U.S. Environmental Protection Agency (USEPA) adopted the *National Toxics Rule* (NTR) on 22 December 1992, which was amended on 4 May 1995, and 9 November 1999, and the *California Toxics Rule* (CTR) on 18 May 2000, which was amended on 13 February 2001. These rules contain water quality criteria applicable to this discharge. The State Water Resources Control Board (State Water Board) adopted the *Policy for Implementation of Toxics Standards for Inland Surface Waters, Enclosed Bays, and Estuaries of California* (known as the State Implementation Policy or SIP) on 2 March 2000, which contains guidance on implementation of the NTR and the CTR.

*BENEFICIAL USES OF THE RECEIVING STREAM*

8. The Basin Plan in Table II-1 identifies beneficial uses for the segment of the Pit River between the confluence of the North and South Forks and the confluence with Hat Creek. The beneficial uses identified in Table II-I are as follows: Municipal and Domestic Supply (MUN); Agricultural Supply (irrigation and stock watering) (AGR); Hydropower Generation (POW); Water Contact Recreation (contact recreation and canoeing and rafting) (REC-1); Other Noncontact Recreation (esthetic enjoyment) (REC-2); Warm Freshwater Habitat (WARM); Cold Freshwater Habitat (COLD); Warm Water Spawning, Reproduction, and/or Early Development Habitat (SPWN); and Wildlife Habitat (WILD).

*EFFLUENT LIMITATIONS AND REASONABLE POTENTIAL*

9. Effluent limitations, and toxic and pretreatment effluent standards established pursuant to Sections 301 (Effluent Limitations), 302 (Water Quality Related Effluent Limitations), 304 (Information and Guidelines), and 307 (Toxic and Pretreatment Effluent Standards) of the *Clean Water Act* (CWA) and amendments thereto are applicable to the discharge.
10. Section 303 (d) of the CWA requires states to identify waters for which implementation of technology-based effluent limitations have not been stringent enough to attain water quality standards for those waters. On 25 July 2003 the USEPA approved the State's updated list of 303 (d) impaired waters, which lists the Pit River as impaired for nutrients, organic enrichment/low dissolved oxygen and temperature.
11. Federal Regulations contained in 40 CFR 122.4 (d) require effluent limitations for all pollutants that are or may be discharged at a level that will cause or have the reasonable potential to cause, or contribute to an in-stream excursion above a narrative or numerical water quality standard. The *National Toxics Rule* NTR and *California Toxics Rule* CTR contain water quality standards applicable to this discharge. On 8 December 2000, the Discharger was issued a letter under the authority of California Water Code Section 13267 requesting effluent and receiving water monitoring to perform a reasonable potential analysis to determine if pollutants are or may be discharged at a level that will cause or have the reasonable potential to cause, or contribute to an in-stream excursion above a narrative or numeric water quality standard. The Discharger sampled the effluent at discharge point 001, and the upstream receiving water on 2 August 2001 and 4 November 2003. Analytical results were submitted for volatile substances, semi volatile substances, pesticides, metals, asbestos, 2,3,7,8 TCDD, and sixteen other dioxin congeners. The methodology described in Section 1.3 of the *Policy for Implementation of Toxics Standards for Inland Surface Waters, Enclosed Bays, and Estuaries of California* (the State Implementation Policy or SIP) was used to evaluate the Discharger's monitoring data and determine reasonable potential. Copper and zinc were detected in the effluent from Discharge 001 at concentrations that may cause or contribute to an in-stream excursion above a narrative or numerical water quality standard or objective. Cyanide was detected in the effluent and receiving water at elevated levels, however, the accuracy of the analysis was questionable. The Central Valley Water Board finds that there is

not sufficient information to determine if the discharge has a reasonable potential to cause or contribute to in-stream excursions above applicable water quality standards resulting from cyanide, and therefore, water quality based effluent limitations for cyanide are not included in this Order. This Order requires additional sampling and analysis for cyanide to determine if a reasonable potential exists. If a reasonable potential is demonstrated, this Permit will be re-opened and an effluent limit for cyanide added.

12. In determining whether a discharge has the reasonable potential to contribute to an in-stream excursion above a narrative or numerical water quality standard (reasonable potential analysis), the dilution of the effluent in receiving water may be considered where areas of dilution are defined. The available dilution may also be used to calculate protective effluent limitations by applying water quality criteria at the edge of the defined mixing zone. In situations where receiving water flows are substantially greater than effluent flows and there is available assimilative capacity, dilution may be considered in establishing effluent limitations. However, during some years there are periods of zero dilution in the Pit River at 001, primarily in the middle and late summer months. Dilution, therefore, cannot be considered in the calculation of effluent limitations at this time, and the Discharger will be required in this Permit to meet effluent limitations at end of pipe. If the Discharger is able to demonstrate through data collection and dilution studies that additional assimilative capacity exists at certain times of the year, then Staff will consider the inclusion of site specific dilution credits at that time.

Water quality criteria and objectives for metals in the CTR and Basin Plan are presented as dissolved concentrations for copper and zinc and are hardness dependent. The minimum hardness for Pit River Water in the vicinity of Discharge 001, based on data collected over the past five years, is 64 mg/L. In the absence of site-specific data, the USEPA recommends conversion factors (translators) to translate total recoverable concentrations to dissolved concentrations. The USEPA conversion factor for copper in freshwater is 0.960 for both the acute and chronic criteria. The USEPA conversion factors for zinc in freshwater are 0.978 for the acute and 0.986 for the chronic criteria. As there is limited data available for the determination of site-specific translators, the Regional Board used USEPA conversion factors. If the Discharger performs additional analysis of total and dissolved zinc and copper in effluent and receiving water which supports the use of site specific translators, Staff will consider their inclusion in the Permit at that time.

13. In studies conducted by the Discharger and sampling by Regional Board staff, the Maximum Effluent Concentration (MEC) for total copper was reported as 11.8 ug/L (total recoverable). The CTR acute aquatic life criterion for copper is 9.19 ug/L (dissolved fraction, after adjusting for minimum hardness of 64 mg/L and applying the EPA translator of 0.960). The CTR chronic criterion for copper is applicable and is 6.12 ug/L (dissolved fraction, after adjusting for minimum hardness of 64 mg/L and applying the EPA translator of 0.960). In determining the effluent concentration allowance (ECA) no dilution credit was included therefore  $ECA = C$ , where C is the priority pollutant criterion /objective adjusted as required for hardness, pH and translators. An effluent limitation for copper is included in this order based on the CTR

criterion maximum concentration (CMC) and is established as 4.6 ug/L (monthly average expressed as total recoverable) and 9.2 ug/L (daily maximum expressed as total recoverable ) calculated as shown in the Information Sheet, a part of this Order.

14. In studies conducted by the Discharger and sampling by Regional Board staff, the Maximum Effluent Concentration (MEC) for total zinc was reported as 58 ug/L (total recoverable). The CTR acute aquatic life criterion for zinc 80.30 ug/L (dissolved fraction, after adjusting for minimum hardness of 64 mg/L and applying the EPA translator of 0.978). The CTR chronic criterion for zinc is applicable and is 80.96 ug/L (dissolved fraction, after adjusting for minimum hardness of 64 mg/L and applying the EPA translator of 0.986). In determining the effluent concentration allowance (ECA) no dilution credit was included therefore  $ECA = C$ , where C is the priority pollutant criterion /objective adjusted as required for hardness, pH and translators. An effluent limitation for zinc is included in this order based on the CTR criterion maximum concentration (CMC) and is established as 40.5 ug/L (monthly average expressed as total recoverable) and 81.9 ug/L (daily maximum expressed as total recoverable) calculated as shown in the Information Sheet , a part of this Order.
15. Based on the results of effluent monitoring, the Discharger cannot currently comply with the new effluent limitations for copper and zinc which are based on water quality criteria contained in the CTR. A time schedule for compliance with these effluent limits is provided in accordance with Section 2.1 of the SIP which provides that: *“Based on an existing discharger’s request and demonstration that it is infeasible for the discharger to achieve immediate compliance with a CTR criterion, or with an effluent limitation based on a CTR criterion, the RWQCB may establish a compliance schedule in an NPDES permit.”* Section 2.1, further states that compliance schedules may be included in NPDES permits provided that the following justification has been submitted: ... *“(a) documentation that diligent efforts have been made to quantify pollutant levels in the discharge and the sources of the pollutant in the waste stream; (b) documentation of source control measures and/or pollution minimization measures efforts currently underway or completed; (c) a proposal for additional or future source control measures, pollutant minimization actions, or waste treatment (i.e., facility upgrades); and (d) a demonstration that the proposed schedule is as short as practicable.”* This Order requires the Discharger to provide this information.
16. Section 13263.6(a), California Water Code, requires that *“the regional board shall prescribe effluent limitations as part of the waste discharge requirements of a POTW for all substances that the most recent toxic chemical release data reported to the state emergency response commission pursuant to Section 313 of the Emergency Planning and Community Right to Know Act of 1986 (42 U.S.C. Sec. 11023) (EPCRA) indicate as discharged into the POTW, for which the state board or the regional board has established numeric water quality objectives, and has determined that the discharge is or may be discharged at a level which will cause, have the reasonable potential to cause, or contribute to, an excursion above any numeric water quality objective.”*

17. The USEPA Toxics Release Inventory database does not list any toxic constituents as being discharged to the city of Alturas WWTP, and therefore, effluent limitations for these metals are not included in this permit pursuant to California Water Code (CWC) Section 13263.6 (a).
18. Chlorine is commonly used as a disinfection agent in the treatment of wastewater. Proper disinfection ensures destruction of pathogens prior to discharge to surface waters. The Discharger uses chlorine for disinfection of the wastewater at the treatment plant. Because chlorine poses a threat to human health and is especially harmful to aquatic organisms, a dechlorination process is necessary for the removal of chlorine. For dechlorination, the Discharger will use sulfur dioxide, which combines with chlorine, to render it relatively unreactive and thus removes it from the waste stream. Inadequate dechlorination may result in the discharge of chlorine to the receiving stream and cause toxicity to aquatic life. The Basin Plan prohibits the discharge of toxic substances in toxic concentrations.

The USEPA has developed Ambient Water Quality Criteria for the protection of freshwater aquatic life. The recommended maximum one-hour average and four-day average concentrations for chlorine are 0.02 mg/L and 0.01 mg/L, respectively. Effluent limitations for chlorine are included in this Order and are based on the Basin Plan narrative toxicity objective.

19. In two letters to the Central Valley Water Board dated 8 April 1999 and 1 July, 2003, the State of California, Department of Health Services (DHS) provided guidance and recommendations for treatment and disinfection of domestic wastewater discharged to surface waters. When dilution of effluent in the receiving stream is less than 20:1, and the beneficial uses of the stream include contact recreation or irrigation of vegetables and fruits where the wastewater may come in contact with the vegetables and fruits, DHS recommends that the effluent be oxidized, coagulated, filtered and disinfected. It is further recommended that the effluent does not exceed an MPN of 2.2 per 100 milliliters for the last seven days for which analyses have been completed or 23 per 100 milliliters in more than one sample in any 30 day period. When dilution of effluent in the receiving stream is greater than 20:1 a secondary, 23 MPN discharge is acceptable. This Permit implements the DHS recommendations.
20. The beneficial uses of the Pit River from the confluence of the forks to Hat Creek include non contact recreational uses and irrigation. To protect these beneficial uses, the Central Valley Water Board finds that the wastewater must be disinfected and adequately treated to prevent disease. The California Department of Health Services (DHS) has developed reclamation criteria, California Code of Regulations, Title 22, Division 4, Chapter 3, (Title 22) for the reuse of wastewater. Title 22 requires that for spray irrigation of food crops where the edible portion is above ground, pasture for animals producing milk for human consumption, and restricted recreational impoundments, that wastewater meet the definition of disinfected secondary-2.2 recycled water. Title 22 is not directly applicable to surface waters, however the Central Valley Water Board finds that it is appropriate to apply the DHS reclamation criteria for disinfected 2.2 secondary recycled water because the Pit River from the confluence of the forks to Hat Creek may be used for agriculture and recreation purposes. (Disinfected secondary-2.2 recycled water is defined as recycled water that has been oxidized and disinfected so that the

median concentration of total coliform bacteria in the disinfected effluent does not exceed a MPN of 2.2 per 100 milliliters utilizing the bacteriological results of the last seven days for which analyses have been completed, and the number of total coliform bacteria does not exceed an MPN of 23 per 100 milliliters in more than one sample in any 30 day period.) While filtration is not required to meet the definition of disinfected secondary-2.2 recycled water, it may be necessary for the Discharger to filter effluent to meet the coliform limitations specified for this class of recycled water. The coliform limitations in the existing Permit are considerably less stringent than those required for disinfected secondary recycled water and would be impossible for the Discharger to meet with the existing plant. For this reason the Discharger will be given until **15 November 2008**, one year after the required completion date for plant upgrades, to comply with the coliform limitations in this Permit.

21. The permitted discharge is consistent with the antidegradation provisions of 40 CFR 131.12 and State Water Board Resolution 68-16. Compliance with these requirements will result in the use of best practicable treatment or control of the discharge. The impact on existing water quality will be insignificant.
22. CWA Sections 303 (a-c), require states to adopt numeric water quality criteria where they are necessary to protect designated uses. The Central Valley Water Board adopted numeric criteria in the Basin Plan. The Basin Plan is a regulatory reference for meeting the state and federal requirements for water quality control (40 CFR 131.20). State Water Board Resolution No. 68-16, Statement of Policy with Respect to Maintaining High Quality of Waters in California, does not allow changes in water quality less than that prescribed in water quality control plans (Basin Plans). The Basin Plan states that: "The numerical and narrative water quality objectives define minimum standards that the Central Valley Water Board will apply to regional waters in order to protect the beneficial uses." This Order contains receiving water limitations based on the Basin Plan numerical and narrative water quality objectives for biostimulatory substances, chemical constituents, color, dissolved oxygen, floating material, oil and grease, pH, pesticides, radioactivity, salinity, sediment, settleable material, suspended material, tastes and odors, temperature, toxicity and turbidity.

#### *PRETREATMENT*

23. The design flow of the Alturas WWTP is less than 5 mgd, and the facility does not receive discharges from industrial users. The Discharger is not required, therefore, to develop a pretreatment program pursuant to USEPA regulations at 40 CFR 403.

#### *GROUNDWATER*

24. Unless otherwise designated by the Central Valley Water Board, the beneficial uses of all groundwaters of the Central Valley Region are municipal and domestic water supply, agricultural supply, and industrial service and process supply. Discharges authorized by this Order may not cause or contribute to degradation of groundwater or interfere with beneficial uses.

### *COLLECTION SYSTEM*

25. The Discharger's sanitary sewer system collects wastewater using sewers, pipes, pumps, and/or other conveyance systems and directs this raw sewage to the wastewater treatment plant. A "sanitary sewer overflow" is defined as a discharge to ground or surface water from the sanitary sewer system at any point upstream of the wastewater treatment plant. Temporary storage and conveyance facilities (such as wet wells, regulated impoundments, tanks, highlines, etc.) may be part of a sanitary sewer system and discharges to these facilities are not considered sanitary sewer overflows, provided that the waste is fully contained within these temporary storage/conveyance facilities.
26. Sanitary sewer overflows consist of varying mixtures of domestic sewage, industrial wastewater, and commercial wastewater. This mixture depends on the pattern of land use in the sewage collection system tributary to the overflow. The chief causes of sanitary sewer overflows include grease blockages, root blockages, debris blockages, sewer line flood damage, manhole structure failures, vandalism, pump station mechanical failures, power outages, storm or groundwater inflow/infiltration, lack of capacity, and contractor caused blockages.
27. Sanitary sewer overflows often contain high levels of suspended solids, pathogenic organisms, toxic pollutants, nutrients, oxygen demanding organic compounds, oil and grease, and other pollutants. Sanitary sewer overflows can cause temporary exceedances of applicable water quality objectives, pose a threat to public health, adversely affect aquatic life, and impair the public recreational use and aesthetic enjoyment of surface waters in the area.
28. Statewide General Waste Discharge Requirements for Sanitary Sewer Systems, Order No. 2006-0003 was adopted by the State Water Board on 2 May 2006. The Discharger is required to submit a Notice of Intent to seek coverage under the general order.

### *STORMWATER*

29. The USEPA promulgated Federal Regulations for storm water on 16 November 1990 in 40 CFR Parts 122, 123, and 124. The NPDES Industrial Storm Water Program regulates storm water discharges from municipal sanitary sewer systems. Wastewater Treatment Plants are applicable industries under the storm water program and are obligated to comply with the Federal Regulations. Storm water discharges from the WWTP are regulated under the General Permit for Discharges of Storm Water Associated with Industrial Activities (State Water Resources Control Board, Water Quality Order No. 97-03-DWQ, NPDES General Permit No. CAS000001). Wastewater treatment plants with design flows of less than one million gallons per day (mgd) are not required to have coverage in the ISW program. The design flow of the Facility is only 0.5 mgd.

*GENERAL*

30. Monitoring is required by this Order for the purposes of assessing compliance with permit limitations and water quality objectives and gathering information to evaluate the need for additional effluent limitations.
31. California Water Code Section 13267 states, in part, "(a) A Regional Board, in establishing...waste discharge requirements... may investigate the quality of any waters of the state within its region" and "(b) (1) In conducting an investigation... the Regional Board may require that any person who... discharges... waste...that could affect the quality of waters within its region shall furnish, under penalty of perjury, technical or monitoring program reports which the Regional Board requires." The accompanying Monitoring and Reporting Program is issued pursuant to CWC Section 13267 and is necessary to assure compliance with these Waste Discharge Requirements. The City of Alturas is responsible for the discharges, which are subject to this Order.
32. The Central Valley Water Board has considered the information in the attached Information Sheet in developing the Findings of this Order. The Information Sheet, Monitoring and Reporting Program No. R5-2006-0103, and Attachment A are a part of this Order.
33. The discharge is presently governed by Waste Discharge Requirements Order No. R5-00-123, adopted by the Central Valley Water Board on 16 June 2000.
34. The USEPA and the Central Valley Water Board have classified this discharge as a minor discharge.
35. The action to adopt an NPDES permit is exempt from the provisions of Chapter 3 of the California Environmental Quality Act (Public Resources Code Section 21000, et seq.), requiring preparation of an environmental impact report or negative declaration in accordance with CWC Section 13389.
36. The Central Valley Water Board has notified the Discharger and interested agencies and persons of its intent to prescribe waste discharge requirements for this discharge and has provided them with an opportunity for a public hearing and an opportunity to submit their written views and recommendations.
37. The Central Valley Water Board, in a public meeting, heard and considered all comments pertaining to the discharge.
38. This Order shall serve as an NPDES permit pursuant to CWA Section 402, and amendments thereto, and shall take effect upon the date of hearing, provided USEPA has no objections.

**IT IS HEREBY ORDERED** that Order No. R5-00-123 is rescinded and the City of Alturas, its agents, successors and assigns, in order to meet the provisions contained in CWC Division 7 and

regulations adopted thereunder, and the provisions of the CWA and regulations and guidelines adopted thereunder, shall comply with the following:

**A. Discharge Prohibitions:**

1. Discharge of wastewater at a location or in a manner different from that described in the Findings of this Order is prohibited.
2. The by-pass or overflow of wastes to surface waters or surface water drainage is prohibited, except as allowed by Standard Provision A.13. [See attached "Standard Provisions and Reporting Requirements for Waste Discharge Requirements (NPDES)"].
3. Neither the discharge nor its treatment shall create a nuisance as defined in Section 13050 of the California Water Code.

**B. Effluent Limitations:**

1. The Discharge of wastewater effluent to the Pit River at Discharge Point 001 in excess of the following limits is prohibited:

<b>Constituent</b>	<b>Units</b>	<b>Monthly Average</b>	<b>Weekly Average</b>	<b>Daily Maximum</b>	<b>4-Day Average</b>	<b>Monthly Median</b>
BOD <sub>5</sub> <sup>a</sup>	mg/L	30 <sup>b</sup>	45 <sup>b</sup>	60 <sup>b</sup>		
	lbs/day <sup>c</sup>	125	187	250		
TSS	mg/L	30 <sup>b</sup>	45 <sup>b</sup>	60 <sup>b</sup>		
	lbs/day <sup>c</sup>	125	187	250		
Settleable Solids	ml/L	0.1		0.2		
Chlorine	mg/L			0.02 <sup>d</sup>	0.01	
Copper	ug/L	4.6		9.2		
Zinc	ug/L	40.5		81.9		
Turbidity	NTU					5
Total Coliform Bacteria	MPN/100 mL			23		2.2

<sup>a</sup> Five-day biochemical oxygen demand at 20° C

<sup>b</sup> To be ascertained by a 24-hour composite

<sup>c</sup> Based upon a design treatment capacity of 0.5 mgd

<sup>d</sup> 1-hour average

2. Interim effluent limits have been established for copper, zinc and total coliform bacteria. The interim effluent limits for copper and zinc apply until **18 May 2010** and those for total coliform bacteria apply until **15 November 2008**. The final limit for

turbidity will not apply until **15 November 2008**. The interim discharge of wastewater to the Pit River in excess of the following is prohibited:

<u>Constituent</u>	<u>Units</u>	<u>Monthly Average</u>	<u>Weekly Average</u>	<u>Daily Maximum</u>	<u>4-Day Average</u>	<u>7-Day Median</u>
Copper	ug/L	11.8		36.7		
Zinc	ug/L	58.0		180.4		
Total Coliform Bacteria <sup>a</sup>	MPN/100 mL			500		23

<sup>a</sup>The Discharger is required to meet the more stringent coliform limit only when there is less than 20:1 dilution in the receiving water.

3. The arithmetic mean of 20°C BOD (five-day) and total suspended solids in effluent samples collected over a monthly period shall not exceed 15 percent of the arithmetic mean of the values for influent samples collected at approximately the same times during the same period (85 percent removal).
4. The discharge shall not have a pH less than 6.5 nor greater than 8.5.
5. The average dry weather (May through October) discharge flow shall not exceed 0.5 million gallons per day (mgd).

**C. Toxicity Limitation**

Survival of test fish in 96-hour bioassays of undiluted waste shall be no less than:

Minimum for any one bioassay.....70 %  
 Median for any three or more consecutive bioassays .....90 %

**D. Discharge Specifications**

1. Objectionable odors originating at this facility shall not be perceivable beyond the limits of the wastewater treatment and disposal areas or property owned by the Discharger.

**E. Sludge Disposal:**

1. Collected screenings, sludges, and other solids removed from liquid wastes shall be disposed of in a manner approved by the Executive Officer and consistent with *Consolidated Regulations for Treatment, Storage, Processing, or Disposal of Solid Waste*, as set forth in Title 27, CCR, Division 2, Subdivision 1, Section 20005, et seq.
2. Any proposed change in sludge use or disposal practice from a previously approved practice shall be reported to the Executive Officer and USEPA Regional Administrator at least 90 days in advance of the change.

3. Use and disposal of sewage sludge shall comply with existing Federal and State laws and regulations, including permitting requirements and technical standards included in 40 CFR 503.
4. If the State Water Board and the Central Valley Water Board become authorized to implement regulations contained in 40 CFR 503, this Order may be reopened to incorporate appropriate time schedules and technical standards. The Discharger must comply with the standards and time schedules contained in 40 CFR 503 whether or not they have been incorporated into this Order.
5. The Discharger is encouraged to comply with the *Manual of Good Practice for Agricultural Land Application of Biosolids* developed by the California Water Environment Association.
6. Within the Annual Report of each year, the Discharger shall report the volume of sludge generated and its disposition in the previous calendar year.

**F. Receiving Water Limitations:**

Receiving Water Limitations are based upon water quality objectives contained in the Basin Plan, and as such, they are a required part of this permit.

The discharge shall not cause the following in the receiving water:

1. Concentrations of dissolved oxygen to fall below 7.0 mg/L.
2. Oils, greases, waxes, or other materials in concentrations that cause nuisance, result in a visible film or coating on the water surface or on objects in the water, or otherwise adversely affect beneficial uses.
3. Discoloration that causes nuisance or adversely affects beneficial uses.
4. Ambient pH to be depressed below 6.5, nor raised above 8.5, nor changes in normal ambient pH levels to be exceeded by more than 0.5 units.
5. Biostimulatory substances which promote aquatic growths in concentrations that cause nuisance or adversely affect beneficial uses.
6. Floating material in amounts that cause nuisance or adversely affect beneficial uses.
7. Suspended sediment load and suspended sediment discharge rate altered in such a manner to cause nuisance or adversely affect beneficial uses.
8. Suspended sediment concentrations that cause nuisance or adversely affect beneficial uses.

9. Taste or odor-producing substances to impart undesirable tastes or odors to fish flesh or other edible products of aquatic origin or to cause nuisance or adversely affect beneficial uses.
10. The turbidity to increase as follows:
  - a. More than 1 Nephelometric Turbidity Units (NTUs) where natural turbidity is between 0 and 5 NTUs.
  - b. More than 20 percent where natural turbidity is between 5 and 50 NTUs.
  - c. More than 10 NTUs where natural turbidity is between 50 and 100 NTUs.
  - d. More than 10 percent where natural turbidity is greater than 100 NTUs
11. The ambient temperature in the receiving water to increase more than 5° F above natural receiving water temperature, nor to increase above 56° F, when such an increase will be detrimental to the fishery – whichever is more restrictive.
12. Deposition of material that causes nuisance or adversely affects beneficial uses.
13. Radionuclides to be present in concentrations that exceed maximum contaminant levels specified in the California Code of Regulations, Title 22; that harm human, plant, animal or aquatic life; or that result in the accumulation of radionuclides in the food web to an extent that presents a hazard to human, plant, animal, or aquatic life.
14. Toxic substances in concentrations that produce detrimental physiological responses in human, plant, animal, or aquatic life. This applies regardless of whether toxicity is caused by a single substance or the interactive effect of multiple substances.
15. Violation of any applicable water quality standard for receiving waters adopted by the Central Valley Water Board or the State Water Board pursuant to the CWA and regulations adopted thereunder.
16. Aquatic communities and populations, including vertebrate, invertebrate, and plant species, to be degraded.
17. The fecal coliform concentration in any 30-day period to exceed a geometric mean of 200 MPN/100 mL or cause more than 10 percent of total samples to exceed 400 MPN/100 mL.
18. Upon adoption of any applicable water quality standard for receiving waters by the Central Valley Water Board or the State Water Board pursuant to the CWA or regulations adopted thereunder, this permit may be reopened and receiving water limitations added.

**G. Ground Water Limitations:**

The discharge shall not cause the groundwater to exceed water quality objectives, unreasonably affect beneficial uses, or cause a condition of pollution or nuisance. The applicable groundwater objective for coliform bacteria is 2.2 MPN/100 mL (maximum) over any seven day period.

**H. Pretreatment Program Provisions**

1. The Discharger shall implement, as more completely set forth in 40 CFR 403.5, the necessary legal authorities, programs, and controls to ensure that the following incompatible wastes are not introduced to the treatment system where incompatible wastes are:
  - a. Wastes which create a fire or explosion hazard in the treatment works;
  - b. Wastes which will cause corrosive structural damage to treatment works, but in no case wastes with a pH lower than 5.0, unless the works is specially designed to accommodate such wastes;
  - c. Solid or viscous waste in amounts which cause obstruction to flow in sewers, or which cause other interference with proper operation or treatment works;
  - d. Any waste, including oxygen demanding pollutants (BOD, etc.), released in such volume or strength as to cause inhibition or disruption in the treatment works, and subsequent treatment process upset and loss of treatment efficiency;
  - e. Heat in amounts that inhibit or disrupt biological activity in the treatment works, or that raise influent temperatures above 40°C (104°F), unless the treatment works is designed to accommodate such heat;
  - f. Petroleum oil, non-biodegradable cutting oil, or products of mineral oil origin in amounts that will cause interference or pass through;
  - g. Pollutants which result in the presence of toxic gases, vapors, or fumes within the treatment works in a quantity that may cause acute worker health and safety problems; and
  - h. Any trucked or hauled pollutants, except at points predesignated by the Discharger.
2. The Discharger shall implement, as more completely set forth in 40 CFR 403.5, the legal authorities, programs, and controls necessary to ensure that indirect discharges

do not introduce pollutants into the sewage system that either alone or in conjunction with a discharge or discharges from other sources:

- a. Flow through the system to the receiving water in quantities or concentrations that cause a violation of this Order, or
  - b. Inhibit or disrupt treatment processes, treatment system operations, or sludge processes, use, or disposal and either cause a violation of this Order or prevent sludge use or disposal in accordance with this Order.
3. The Discharger shall notify industrial users, subject to Categorical Pretreatment Standards under 40 CFR 403.6 and 40 CFR Chapter I, Subchapter N, of their discharge effluent limitations. The limitations must be at least as stringent as the pretreatment standards contained in the applicable federal category. The Discharger may develop more stringent technically based local limitations if it can show cause. The Discharger shall notify the Regional Board if an industrial user violates its discharge effluent limitations to the collection system.

**H. Provisions:**

1. Treatment facilities shall be located and operated to prevent inundation or washout due to floods with a 100-year return frequency.
2. This Permit includes a compliance schedule for implementing the phase I treatment plant improvements and achieving compliance with the disinfected secondary-2.2 coliform effluent limits. The time schedule for these tasks is as follows:

<u>Task</u>	<u>Compliance/Completion Due</u>
Complete Phase I Improvements	<b>15 November 2007</b>
Attain Compliance with Final Coliform Effluent Limits	<b>15 November 2008</b>

3. After **15 November 2008**, wastewater shall be oxidized, coagulated, filtered and disinfected, or equivalent treatment provided.
4. The Discharger is required to meet the more stringent final effluent coliform limits only during periods when there is less than 20:1 dilution in the receiving water, provided that the upstream receiving water flow is monitored to insure that a 20:1 dilution exists at the time of discharge. If upstream receiving water flow is not monitored, the more stringent final effluent limits for coliform will apply annually during the period **15 June through 15 November**. (While there can be low flow conditions during the period 15 November through 15 January, there is no irrigation of food crops or contact recreation in progress at that time.)

5. **Within 60 days** after adoption of this Order, the Discharger shall complete and submit a compliance time schedule justification for copper and zinc. The compliance schedule justification shall include all items specified by the SIP Section 2.1, Paragraph 3 (items (a) through (d)). The final water quality based effluent limitations for copper and zinc become effective **60 days** after adoption of this Order unless an acceptable compliance schedule justification meeting the requirements of Section 2.1 of the SIP is completed and submitted by the Discharger. If an acceptable compliance schedule justification is submitted, the interim effluent limits described in this Order for copper and zinc will supercede the final effluent limits until **18 May 2010**. At that time the final effluent limits will be fully applicable. As this schedule is greater than one year, the Discharger shall submit annual progress reports on **1 July** each year until the Discharger achieves compliance with the final water quality based effluent limitations for copper and zinc. Within **12 months** of adoption of this Order, the Discharger shall either (1) submit a workplan for reducing the concentrations of pollutants in the discharge to levels that will comply with the final effluent limits, or (2) submit a workplan(s) for studies that will prove that the final effluent limits should be modified based on site-specific conditions. The Discharger must take such actions necessary to comply with the final effluent limits. The Regional Board may reopen this Order and modify the final effluent limits if appropriate, based on results of studies the Discharger may conduct.
6. The Discharger shall not allow pollutant-free wastewater to be discharged into the collection, treatment, and disposal system in amounts that significantly diminish the system's capability to comply with this Order. Pollutant-free wastewater means rainfall, groundwater, cooling waters, and condensates that are essentially free of pollutants.
7. The Discharger shall conduct the chronic toxicity testing specified in the Monitoring and Reporting Program. If the testing indicates that the discharge causes, has the reasonable potential to cause, or contributes to an in-stream excursion above effluent toxicity limitations established by this Order, the Discharger shall initiate a Toxicity Identification Evaluation (TIE) to identify the causes of toxicity. Upon completion of the TIE, the Discharger shall submit a workplan to conduct a Toxicity Reduction Evaluation (TRE) and, after Central Valley Water Board evaluation, conduct the TRE. This Order will be reopened and a chronic toxicity limitation included and/or a limitation for the specific toxicant identified in the TRE included.
8. The Discharger shall use the best practicable treatment or control technique currently available to limit mineralization to no more than a reasonable increment.
9. The Discharger shall report to the Central Valley Water Board any toxic chemical release data it reports to the State Emergency Response Commission within 15 days of reporting the data to the Commission pursuant to section 313 of the Emergency Planning and Community Right to Know Act of 1986.

10. The Discharger shall comply with all the items of the "Standard Provisions and Reporting Requirements for Waste Discharge Requirements (NPDES)," dated February 2004, which are part of this Order. This attachment and its individual paragraphs are referred to as "Standard Provisions".
11. The Discharger shall comply with Monitoring and Reporting Program No. R5-2006-0103, which is part of this Order, and any revisions thereto as ordered by the Executive Officer.

When requested by USEPA, the Discharger shall complete and submit Discharge Monitoring Reports. The submittal date shall be no later than the submittal date specified in the Monitoring and Reporting Program for Discharger Self Monitoring Reports. DMRs must be signed and certified as required by the standard provisions. The Discharge shall submit the original DMR and one copy of the DMR to the address listed below:

Water Resources Control Board  
Discharge Monitoring Report Processing Center  
Post Office Box 671  
Sacramento, CA 95

12. **This Order expires on 11 November 2011**, and the Discharger must file a Report of Waste Discharge in accordance with Title 23, CCR, not later than 180 days in advance of such date in application for renewal of waste discharge requirements if it wishes to continue the discharge.
13. Prior to making any change in the discharge point, place of use, or purpose of use of the wastewater, the Discharger shall obtain approval of, or clearance from, the State Water Board (Division of Water Rights).
14. In the event of any change in operation, control or ownership of land or waste discharge facilities presently owned or controlled by the Discharger, the Discharger shall notify the succeeding owner or operator of the existence of this Order by letter, a copy of which shall be immediately forwarded to this office.

To assume operation under this Order, the succeeding owner or operator must apply in writing to the Executive Officer requesting transfer of the Order. The request must contain the requesting entity's full legal name, the state of incorporation if a corporation, address and telephone number of the persons responsible for contact with the Central Valley Water Board and a statement. The statement shall comply with the signatory paragraph of Standard Provision D.6 and state that the new owner or operator assumes full responsibility for compliance with this Order. Failure to submit the request shall be considered a discharge without requirements, a violation of the CWC. Transfer shall be approved or disapproved in writing by the Executive Officer.

WASTE DISCHARGE REQUIREMENTS ORDER NO. R5-2006-0103  
NPDES NO. CA0078921  
CITY OF ALTURAS  
WASTEWATER TREATMENT PLANT  
MODOC COUNTY

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I, PAMELA C. CREEDON, Executive Officer, do hereby certify the foregoing is a full, true, and correct copy of an Order adopted by the California Regional Water Quality Control Board, Central Valley Region, on 22 September 2006.

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PAMELA C. CREEDON, Executive Officer

CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD  
CENTRAL VALLEY REGION

NPDES NO. CA0078921

MONITORING AND REPORTING PROGRAM NO. R5-2006-0103  
FOR  
CITY OF ALTURAS  
WASTEWATER TREATMENT PLANT  
MODOC COUNTY

The Code of Federal Regulations (CFR) at 40 CFR Section 122.48 requires that all NPDES permits specify monitoring and reporting requirements. California Water Code sections 13267 and 13383 also authorize the Central Valley Regional Water Quality Control Board (Central Valley Water Board) to require technical and monitoring reports. This Monitoring and Reporting Program establishes monitoring and reporting requirements, which implement the federal and California regulations.

**INFLUENT MONITORING**

A sampling station shall be established where representative samples of influent can be collected. Samples shall be collected at the influent sampling station at approximately the same time as effluent samples and should be representative of the influent flow for the period sampled. Influent samples shall be analyzed according to the following schedule.

<u>Constituent</u>	<u>Units</u>	<u>Type of Sample</u>	<u>Sampling Frequency</u>
Flow	mgd	Continuous	Daily
BOD <sub>5</sub>	mg/L	24-hr Composite	Monthly
Total Suspended Solids	mg/L	24-hr Composite	Monthly

**EFFLUENT MONITORING**

Effluent samples shall be collected at Discharge Point 001 and 002 downstream of the last connection through which wastes can be admitted to the outfall. Effluent samples shall be representative of the volume and nature of the discharge. Composite samples may be collected by a proportional sampling device approved by the Executive Officer or by grab samples composited proportionately to flow. When compositing grab samples, the sampling interval shall not exceed one hour. The time of collection of grab samples shall be recorded. Effluent samples shall be analyzed according to the following schedule.

<u>Constituent</u>	<u>Units</u>	<u>Type of Sample</u>	<u>Sample Frequency</u>
Flow	mgd	Continuous	Daily
Total Residual Chlorine	mg/L	Continuous	Daily
BOD <sub>5</sub>	mg/L	24-hr Composite	Weekly
Total Suspended Solids	mg/L	24-hr Composite	Weekly
pH	pH units	Grab	Weekly

Electrical Conductivity @ 25°C	umhos/cm	Grab	Monthly
Total Coliform Bacteria	MPN/100 mL	Grab	Weekly
Temperature	°C	Grab	Weekly
Ammonia	mg/L	Grab	Quarterly
Priority Pollutants <sup>a</sup>	ug/L	24 hr Composite	Once during Permit Cycle
Acute Toxicity <sup>c</sup>	% survival	Grab	Quarterly
Total Dissolved Solids	mg/L	Grab	Quarterly
Turbidity <sup>d</sup>	NTU	Grab	Daily
Zinc (Total and Dissolved) <sup>e</sup>	ug/L	24 hr Composite	Monthly
Copper (Total and Dissolved) <sup>e</sup>	ug/L	24 hr Composite	Monthly
Hardness <sup>e</sup>	mg/L	24 hr Composite	Monthly
Cyanide <sup>f</sup>	ug/L	Grab	Quarterly (One Year)
Chronic Toxicity	To be done once during permit cycle. See requirements below.		

<sup>a</sup> Samples shall be analyzed for the toxic priority pollutants identified by the California Toxics Rule at 40 CFR 131.38. Effluent samples shall be collected simultaneously with receiving water samples to be analyzed for the Priority Pollutants. See requirements below under section "Priority Pollutant Monitoring". Priority Pollutant sampling should not be conducted prior to **15 November 2008**.

<sup>b</sup> Priority pollutant sampling shall be performed once during the Permit cycle following the start of operation of the new upgraded treatment system.

<sup>c</sup> All acute toxicity bioassays shall be performed according to EPA-821-R-02-012 *Methods for Measuring the Acute Toxicity of Effluents and Receiving Waters to Freshwater and Marine Organisms, Fifth Edition*, October 2002 (or latest edition) using *Pimephales promelas* with no pH adjustment, with exceptions granted to the Discharger by the Executive Officer and the Environmental Laboratory Accreditation Program (ELAP). Temperature and pH shall be recorded at the time of bioassay sample collection.

<sup>d</sup> Turbidity monitoring is not required until after **15 November 2008**, at which time the Discharger is required to meet the more stringent final effluent coliform limits as recommended by the California Department of Health Services

<sup>e</sup> Samples shall be taken monthly for the first 12 months and quarterly during the months of June, September, December and March thereafter.

<sup>f</sup> Cyanide shall be monitored quarterly for one year to determine if there is reasonable potential for exceeding an applicable water quality criterion.

## RECEIVING WATER MONITORING

All receiving water samples shall be grab samples. Receiving water monitoring shall include the following:

<u>Station</u>	<u>Station Description</u>
R-1	Immediately upstream from the point of discharge and downstream from the

R-2 confluence of the North and South Forks of the Pit River  
 100 feet downstream from the point of discharge

Receiving water samples shall be analyzed according to the following schedule.

<u>Constituent</u>	<u>Units</u>	<u>Station</u>	<u>Sampling Frequency</u>
Dissolved Oxygen	mg/L	R-1, R-2	Weekly
pH	pH units	R-1, R-2	Weekly
Temperature	°C	R-1, R-2	Weekly
Electrical Conductivity @ 25°C	umhos/cm	R-1, R-2	Weekly
Zinc (Total and Disolved) <sup>a</sup>	ug/L	R-1, R-2	Monthly
Copper (Total and Disolved) <sup>a</sup>	ug/L	R-1, R-2	Monthly
Hardness <sup>a</sup>	mg/L	R-1, R-2	Monthly
Priority Pollutants <sup>b,c</sup>	ug/L	R-1	Once during Permit Cycle
Upstream Flow <sup>d</sup>	mgd	N. and S. Forks	Weekly

<sup>a</sup> Samples shall be taken monthly for a period of 12 months and bi-annually in the months of June and December thereafter.

<sup>b</sup> Samples shall be analyzed for the toxic priority pollutants identified by the California Toxics Rule at 40 CFR 131.38. Receiving water samples shall be collected simultaneously with effluent samples to be analyzed for the priority pollutants. Monitoring shall be conducted in accordance with procedures described below under section "Priority Pollutant Monitoring".

<sup>c</sup> Priority pollutant sampling shall be performed once during the Permit cycle, following the start of operation of the new upgraded treatment plant.

<sup>d</sup> Upstream flow must be determined by adding the flows in the North and South Forks. North Fork Flow may be determined at the Estes Street bridge. South Fork flow may be determined at the Likely gauging station. Upstream receiving water flow monitoring is required to determine whether a 20:1 effluent dilution exists.

Whenever receiving water samples are collected, the Discharger shall observe receiving water conditions throughout the reach bounded by Stations R-1, R-2 and record observations pertaining to:

- |                              |                                |
|------------------------------|--------------------------------|
| Floating or suspended matter | Films, sheens, and coatings    |
| Discoloration                | Algae, fungi, and slime growth |
| Aquatic life                 | Potential nuisance conditions  |
| Bottom deposits              |                                |

### CHRONIC TOXICITY MONITORING

Chronic toxicity monitoring shall be conducted to determine whether the effluent is contributing toxicity to the receiving water. The testing shall be conducted as specified in EPA-821-R-02-013,

*Short-Term Methods for Estimating the Chronic Toxicity of Effluents and Receiving Waters to Freshwater Organisms*, Fourth Edition, October 2002. Composite samples shall be collected at the discharge of the plant prior to its entering the unnamed agricultural drain. It has been demonstrated in the past that water from the Pit River upstream of the discharge point exhibits toxicity and cannot, therefore, be used as dilution water in the chronic toxicity test. Laboratory water shall be used as the dilution water. Twenty-four hour composite samples shall be representative of the volume and quality of the discharge. If at the time of sampling the discharge is not continuous the sample shall be a composite over the entire discharge time for the day. Time of sample collection shall be recorded. The chronic toxicity monitoring shall be performed on the undiluted effluent samples. The sensitivity of the test organisms to a reference toxicant shall be determined concurrently with each bioassay and reported with the test results. Both the reference toxicant and effluent test must meet all test acceptability criteria as specified in the chronic manual. If the test acceptability criteria are not achieved, then the Discharger must re-sample and re-test within 14 days. Chronic toxicity monitoring shall include the following:

Species: *Pimephales promelas*, *Ceriodaphnia dubia* and *Selenastrum capricornutum*

Frequency: Once prior to expiration of this Order

### **PRIORITY POLLUTANT MONITORING**

The State Water Resources Control Board (State Water Board) adopted the *Policy for Implementation of Toxics Standards for Inland Surface Waters, Enclosed Bays, and Estuaries of California* (known as the State Implementation Policy or SIP). The SIP states that the Regional Boards will require periodic monitoring (at least once prior to issuance and reissuance of a permit) for pollutants for which criteria or objectives apply and for which no effluent limitations have been established.

Receiving water samples shall be collected upstream at receiving water station R-1. Receiving water and effluent samples shall be collected simultaneously, and analyzed for the CTR pollutants (identified in Attachment E) plus pH and hardness. The Discharger is not required to perform asbestos monitoring or additional dioxin congener monitoring. All analyses shall be performed at a laboratory certified by the California Department of Health Services. The laboratory is required to submit the Minimum Level (ML) and the Method Detection Limit (MDL) with the reported results for each of the analytes. Laboratory methods and limits shall be as described in the *Policy for Implementation of Toxics Standards for Inland Surface Waters, Enclosed Bays, and Estuaries of California* (2000), unless a variance has been approved by the Executive Officer.

All organic analyses shall be by Gas Chromatography/Mass Spectrometry (GCMS), Method 8260B for volatiles and Method 8270C for semi-volatiles. Pesticides shall be analyzed by Method 8081A. Dioxins shall be analyzed by Method 1613/8290. If organic analyses are run by Gas Chromatography (GC) methods, any detectable concentrations are to be confirmed by GCMS. Inorganics shall be analyzed by the following Methods.

Metals shall be analyzed by the USEPA methods listed below. Alternative analytical procedures may be used with approval by the Central Valley Water Board if the alternative method has the same or better detection level than the method listed.

Method Description	EPA Method	Constituents
Inductively Coupled Plasma/Mass Spectrometry (ICP/MS)	1638	Antimony, Beryllium, Cadmium, Copper, Lead, Nickel, Selenium, Silver, Thallium, Total Chromium, Zinc
Cold Vapor Atomic Absorption (CVAA)	1631	Mercury
Gaseous Hydride Atomic Absorption (HYDRIDE)	206.3	Arsenic
Flame Atomic Absorption (FAA)	218.4	Chromium VI
Colorimetric	335./ 2 or 3	Cyanide

All priority pollutant metal analyses shall be performed at a laboratory certified by the California Department of Health Services. The laboratory is required to submit the Minimum Level (ML) and the Method Detection Limit (MDL) with the reported results for each constituent. The MDL should be as close as practicable to the USEPA MDL determined by the procedure found in 40 CFR Part 136. The results of analytical determinations for the presence of chemical constituents in a sample shall use the following reporting protocols:

- a. Sample results greater than or equal to the reported ML shall be reported as measured by the laboratory.
- b. Sample results less than the reported ML, but greater than or equal to the laboratory's MDL, shall be reported as "Detected but Not Quantified," or DNQ. The estimated chemical concentration of the sample shall also be reported.
- c. For the purposes of data collection, the laboratory shall write the estimated chemical concentration next to DNQ as well as the words "Estimated Concentration." Numerical estimates of data quality may be by percent accuracy (+ or - a percentage of the reported value), numerical ranges (low to high), or any other means considered appropriate by the laboratory.
- d. Sample results that are less than the laboratory's MDL shall be reported as "Not Detected" or ND.

## SLUDGE MONITORING

A composite sample of sludge shall be collected annually in accordance with the USEPA POTW Sludge Sampling and Analysis Guidance Document, August 1989, and tested for the following metals:

Cadmium	Lead
Chromium	Nickel
Copper	Zinc

Sampling records shall be retained for a minimum of five years. A log shall be kept of sludge quantities generated, and of handling and disposal activities. The frequency of entries is discretionary; however, the log should be complete enough to serve as a basis for part of the annual report. The Discharger shall submit annually by 30 January:

1. Annual sludge production in dry tons and percent solids.
2. A description of disposal methods, including the following information related to the disposal methods used at the facility. If more than one method is used, include the percentage of annual sludge production disposed by each method.
  - a. For landfill disposal, include: (1) the Central Valley Water Board's waste discharge requirement Order numbers that regulate the landfill(s) used; (2) the present classifications of the landfill(s) used; and (3) the names and locations of the facilities receiving sludge.
  - b. For land application, include: (1) the location of the site(s); (2) the Central Valley Water Board's waste discharge requirement numbers that regulate the site(s); (3) the application rate in lbs/acre/year (specify wet or dry); and (4) subsequent uses of the land.
  - c. For other disposal methods, include: (1) the location of the site(s); and (2) the Central Valley Water Board's waste discharge requirement numbers that regulate the site(s).

## REPORTING

Unless otherwise specified, monitoring results shall be submitted to the Central Valley Water Board by the first day of the second month following sample collection (i.e., the January report is due by 1 March). Effective in January 2004, any NPDES effluent monitoring report received more than 30 days after its due date is subject to a \$3000 Mandatory Minimum Penalty [Water Code Section 13385]. An additional \$3000 penalty is required for each 30 days a report is late. If you have no discharge, you must still submit a report indicating that no discharge occurred, or you will be subject to the \$3000 penalty.

In reporting the monitoring data, the Discharger shall arrange the data in tabular form so that the date, the constituents, and the concentrations are readily discernible. The data shall be summarized in such a manner to illustrate clearly whether the discharge complies with the waste discharge requirements.

If the Discharger monitors any pollutant at the locations designated herein more frequently than is required by this Order, the results of such monitoring shall be included in the calculation and reporting of the values required in the discharge monitoring report form. Such increased frequency shall be indicated on the Discharge Monitoring Reports.

Upon written request of the Central Valley Water Board, the Discharger shall submit an Annual Report (calendar year) with both tabular and graphical summaries of the monitoring data obtained during the previous year. The report shall discuss the facility's compliance record. If violations have occurred, the report shall also discuss the corrective actions taken and planned to bring the discharge into full compliance with the waste discharge requirements. The Annual Report shall be submitted by **1 February of the subsequent year** and shall address all aspects of the waste discharge requirements (effluent limitations, compliance schedules, storm water, sludge handling and disposal, etc.)

At any time during the term of this permit, the State Water Board or Central Valley Water Board may notify the Discharger to electronically submit self-monitoring reports. Until such notification is given, the Discharger shall submit self-monitoring reports in accordance with the requirements described above.

All reports submitted in response to this Order shall comply with the signatory requirements of Standard Provisions D.6.

The Discharger shall implement the Monitoring and Reporting Program beginning on the effective date of this Order.

Ordered by:

\_\_\_\_\_  
PAMELA C. CREEDON, Executive Officer

## INFORMATION SHEET

ORDER NO. R5-2006-0103  
NPDES NO. CA0078921  
CITY OF ALTURAS  
WASTEWATER TREATMENT PLANT  
MODOC COUNTY

### GENERAL INFORMATION

The City of Alturas (hereafter referred to as Discharger) submitted a Report of Waste Discharge, dated 9 December 2004, and applied for permit renewal to discharge waste under the National Pollutant Discharge Elimination System (NPDES) from the Alturas Wastewater Treatment Plant (WWTP). The Discharger is currently regulated under Waste Discharge Requirements Order No. R5-00-123 (NPDES No. CA0078921), adopted by the Central Valley Regional Water Quality Control Board (hereafter Board) on 16 June 2000.

The City of Alturas owns and operates a wastewater collection, treatment, and disposal system, and provides sewerage service within the city limits. The treatment plant (Assessors Parcel No 022-130-11) is in Section 14, Township 42 North, Range 12 East of the Mt. Diablo Base Line and Meridian. Treated municipal wastewater is currently discharged, at Discharge Point 001, to the Pit River, a water of the United States, immediately downstream of the confluence of the North and South Forks.

The existing treatment system consists of an inlet screen, inlet Parshall flume, grit removal, comminutor, primary clarifier, aerobic sludge digester, fixed bed trickling filter, secondary clarifier, chlorine contact chamber, dechlorination, outlet Parshall flume and outfall structure.

The Discharger was issued Cease and Desist (C&D) Order No. R5-2003-0128 on 5 September 2003, which required the City of Alturas to cease and desist discharging waste in violation of Waste Discharge Requirements Order No. 5-00-123 (NPDES No. CA0078921). Specifically the Order required the City to submit a report identifying the selected alternative to either upgrading or replacing the treatment plant.

The City has been approved for Small Communities Grant funding and has submitted a plan through their engineering consultant for upgrading the plant which includes: new grinder for headworks, replacement of trickling filter media, replacement of trickling filter pumps and pump drives, addition of secondary clarifier, modification of Parshall flume, new chlorine contact chamber, new concrete sludge drying beds, upgrade of collection system pump stations, slip lining of approximately 2,400 ft of sewer line and modification of chlorination controls.

The facility is in the Pit River Hydrologic Sub Area No. 526.52, as depicted on interagency hydrologic maps prepared by the California Department of Water Resources in August 1986.

## **BENEFICIAL USES**

The Basin Plan in Table II-1 identifies beneficial uses for the segment of the Pit River between the confluence of the North and South Forks and the confluence with Hat Creek. The beneficial uses identified in Table II-I are as follows: Municipal and Domestic Supply (MUN); Agricultural Supply (irrigation and stock watering) (AGR); Hydropower Generation (POW); Water Contact Recreation (contact recreation and canoeing and rafting) (REC-1); Other Noncontact Recreation (esthetic enjoyment) (REC-2); Warm Freshwater Habitat (WARM); Cold Freshwater Habitat (COLD); Warm Water Spawning, Reproduction, and/or Early Development Habitat (SPWN); and Wildlife Habitat (WILD). The beneficial uses of groundwater in the area of the City of Alturas Wastewater Treatment Plant are municipal and domestic water supply, agricultural supply, and industrial service and process supply.

## **BASIS FOR PERMIT REQUIREMENTS**

The Discharger operates a publicly owned wastewater treatment facility, and therefore, is subject to the USEPA secondary treatment regulations at 40 CFR 133.

### **Discharge Prohibitions**

Prohibitions on bypass, nuisance, and discharges that occur in a manner different than described by the Order are retained from Order No. R5-00-123 and/or are consistent with objectives of the Basin Plan, as required by the California Water Code and the Clean Water Act (CWA), to protect the beneficial uses of waters of the State.

### **Establishment of Mass-Based Effluent Limits and Effluent Flow Limit**

This Order establishes concentration-based and mass-based effluent limits. The mass-based effluent limits are calculated using the concentration-based limits and the design maximum effluent flow rate for the facility of 0.5 mgd.

### **Dilution Considerations for Effluent Limit Calculations**

In determining whether a discharge has the reasonable potential to contribute to an in-stream excursion above a narrative or numerical water quality standard (reasonable potential analysis), the dilution of the effluent in receiving water may be considered where areas of dilution are defined. The available dilution may also be used to calculate protective effluent limitations by applying water quality criteria at the edge of the defined mixing zone. In situations where receiving water flows are substantially greater than effluent flows and there is available assimilative capacity, dilution may be considered in establishing effluent limitations. During some years there are periods of zero dilution in the Pit River at 001, primarily in the middle and late summer months. Dilution, therefore, has not been considered in the calculation of effluent limitations, and the Discharger will be required to meet effluent limitations at end of pipe. The Discharger is exploring the possibility of a land application site. If and when this occurs the Central Valley Water Board may grant a

seasonal dilution credit and a mixing zone, following independent study and demonstration by the Discharger that a dilution credit is appropriate.

### **Determination of Effluent Limits for CTR Constituents and Toxicity**

#### *Reasonable Potential Analysis*

Federal Regulations contained in 40 CFR 122.4 (d) require effluent limitations for all pollutants that are or may be discharged at a level that will cause or have the reasonable potential to cause, or contribute to an in-stream excursion above a narrative or numerical water quality standard. The *National Toxics Rule* NTR and *California Toxics Rule* CTR contain water quality standards applicable to this discharge. On 8 December 2000, the Discharger was issued a letter under the authority of California Water Code Section 13267 requesting effluent and receiving water monitoring to perform a reasonable potential analysis to determine if pollutants are or may be discharged at a level that will cause or have the reasonable potential to cause, or contribute to an in-stream excursion above a narrative or numeric water quality standard. The Discharger sampled the effluent at discharge point 001, and the upstream receiving water on 2 August 2001 and 4 November 2003. Analytical results were submitted for volatile substances, semi volatile substances, pesticides, metals, asbestos, 2378 TCDD, and sixteen other dioxin congeners. The methodology described in Section 1.3 of the *Policy for Implementation of Toxics Standards for Inland Surface Waters, Enclosed Bays, and Estuaries of California* (the State Implementation Policy or SIP) was used to evaluate the Discharger's monitoring data and determine reasonable potential. Copper and zinc were detected in the effluent from Discharge 001 at concentrations that may cause or contribute to an in-stream excursion above a narrative or numerical water quality standard or objectives. Additional samples of effluent and receiving water were taken during the period from 1 January 2004 to 1 June 2005 and analyzed for copper and zinc. Results confirmed that a reasonable potential existed for these two metals. Cyanide was detected in the effluent and receiving water at elevated levels, however, the accuracy of the analysis was questionable. The Central Valley Water Board finds that there is not sufficient information to determine if the discharge has a reasonable potential to cause or contribute to in-stream excursions above applicable water quality standards resulting from cyanide, and therefore, water quality based effluent limitations for cyanide are not included in this Order. This Order requires additional sampling and analysis for cyanide to determine if a reasonable potential exists. If a reasonable potential is demonstrated, this Permit will be re-opened and an effluent limit for cyanide added.

#### *Calculation of Effluent Limitations (Copper)*

Following are the steps, as presented in section 1.4.B of the SIP, to calculate the effluent limits for copper:

Step 1: Applicable water quality criterion/objective (C)

CTR criteria for copper are a function of receiving water hardness. The criterion continuous concentration (CCC) is given by the following equation:

$$\text{CCC (chronic)} = e^{(0.8545 * \ln(\text{hardness}) - 1.702)} * (0.960) \text{ as dissolved fraction}$$

Using the minimum R-1 Pit River hardness value for the past three years of 64 mg/L gives the following chronic criterion value:

$$CCC = 6.12 \mu\text{g/L}$$

The CTR criterion maximum concentration (CMC) is given by:

$$CMC = e^{(0.9422 \cdot \ln(\text{hardness}) - 1.700)} * (0.960) \text{ as dissolved fraction}$$

$$CMC = 8.83 \mu\text{g/L}$$

Step 2: Calculate the ECA

$$ECA = \text{Effluent Concentration Allowance} = C + D * (C - B)$$

Where D = dilution credit = 0 and B = background

Since D=0, ECA = C

$$ECA_{CCC} = 6.12 \mu\text{g/L}$$

$$ECA_{CMC} = 8.83 \mu\text{g/L}$$

Step 3: Determine long-term average (LTA)

$$C_V = 0.6; \text{ECA multiplier}_{\text{chronic}99} = 0.527$$

$$\text{ECA multiplier}_{\text{acute}99} = 0.321$$

$$LTA_{CCC} = 3.23 \mu\text{g/L}$$

$$LTA_{CMC} = 2.83 \mu\text{g/L}$$

Step 4: Select lowest LTA

$$LTA_{CMC} = 2.83 \mu\text{g/L}$$

Step 5: Calculate water quality based effluent limits

$$C_V = 0.6; \text{AMEL multiplier}_{95} = 1.55 \text{ (n=4 for less than 4 samples per month)}$$

$$\text{MDEL multiplier}_{99} = 3.11$$

Chronic translator: 0.960

Acute translator: 0.960

**Average Monthly Effluent Limit for Copper = 4.57  $\mu\text{g/L}$  (total recoverable)**

**Maximum Daily Effluent Limit for Copper = 9.17  $\mu\text{g/L}$  (total recoverable)**

Based on the results of effluent monitoring, the Discharger cannot currently comply with these new effluent limitations. A time schedule for compliance with these effluent limits is provided by this Order.

#### *Calculation of Effluent Limitations (Zinc)*

Following are the steps, as presented in section 1.4.B of the SIP, to calculate the effluent limits for zinc:

Step 1: Applicable water quality criterion/objective (C)

CTR criteria for zinc are a function of receiving water hardness. The criterion continuous concentration (CCC) is given by the following equation:

$$\text{CCC (chronic)} = e^{(0.8473 \cdot \ln(\text{hardness}) + 0.884)} * (0.986) \text{ as dissolved fraction}$$

Using the minimum R-1 Pit River hardness value for the past three years of 64 mg/L gives the following chronic criterion value:

$$\text{CCC} = 82.09 \mu\text{g/L}$$

The CTR criterion maximum concentration (CMC) is given by:

$$\text{CMC} = e^{(0.8473 \cdot \ln(\text{hardness}) + 0.884)} * (0.978) \text{ as dissolved fraction}$$

$$\text{CMC} = 80.28 \mu\text{g/L}$$

Step 2: Calculate the ECA

$$\text{ECA} = \text{Effluent Concentration Allowance} = C + D * (C - B)$$

Where D = dilution credit = 0 and B = background

$$\text{Since } D=0, \text{ ECA} = C$$

$$\text{ECA}_{\text{CCC}} = 82.09 \mu\text{g/L}$$

$$\text{ECA}_{\text{CMC}} = 80.28 \mu\text{g/L}$$

Step 3: Determine long-term average (LTA)

$$C_V = 0.6; \text{ ECA multiplier}_{\text{chronic99}} = 0.527$$

$$\text{ECA multiplier}_{\text{acute99}} = 0.321$$

$$\text{LTA}_{\text{CCC}} = 43.26 \mu\text{g/L}$$

$$\text{LTA}_{\text{CMC}} = 25.77 \mu\text{g/L}$$

Step 4: Select lowest LTA

$$\text{LTA}_{\text{CMC}} = 25.77 \mu\text{g/L}$$

Step 5: Calculate water quality based effluent limits

$$C_V = 0.6; \text{ AMEL multiplier}_{95} = 1.55 \text{ (n=4 for less than 4 samples per month)}$$

$$\text{MDEL multiplier}_{99} = 3.11$$

$$\text{Chronic translator: } 0.986$$

$$\text{Acute translator: } 0.978$$

**Average Monthly Effluent Limit for Zinc = 40.51  $\mu\text{g/L}$  (total recoverable)**

**Maximum Daily Effluent Limit for Zinc = 81.94  $\mu\text{g/L}$  (total recoverable)**

Based on the results of effluent monitoring, the Discharger probably cannot currently comply with these new effluent limitations. A time schedule for compliance with these effluent limits is provided by this Order.

#### *Acute and Chronic Toxicity*

The Basin Plan includes a narrative water quality objective for toxicity that requires receiving waters to be free of toxic substances in concentrations that produce detrimental physiological responses in human, plant, animal, or aquatic life. The Basin Plan also requires, at a minimum, 96-hour bioassays to evaluate compliance with the narrative objective, and, where appropriate, acute toxicity limitations and monitoring must be required. Section 4 of the SIP requires chronic toxicity monitoring to be conducted to demonstrate compliance with narrative toxicity objectives. This Order implements both the Basin Plan and SIP toxicity requirements.

The State has listed the Pit River on the State's 303 (d) list as impaired for nutrients, organic enrichment/low dissolved oxygen and temperature. The Central Valley Water Board has determined that the Alturas WWTP does not increase the temperature in the Pit River and is a negligible contributor of organic BOD during most of the year when there is adequate flow in the Pit River. To insure that the narrative water quality objectives for toxicity are met, this Permit includes toxicity effluent limitations and monitoring.

#### **Determination of Effluent Limits for non-CTR Constituents**

##### *Chlorine*

The Basin Plan prohibits the discharge of toxic materials in toxic concentrations. Chlorine is used for disinfection of the effluent waste stream. Chlorine can cause toxicity to aquatic organisms when discharged to surface waters. USEPA recommends, in their Ambient Water Quality Criteria for the Protection of Fresh Water Aquatic Life, that chlorine concentrations not exceed 0.02 mg/L as a 1-hour average and 0.01 mg/L as a 4-day average. The use of chlorine as a disinfectant in the wastewater treatment process presents a reasonable potential that it could be discharged in toxic concentrations. An effluent limitation for chlorine has been included in the Order to protect the receiving stream aquatic life beneficial uses. The effluent limitation has been established at the USEPA recommended ambient water quality criteria for chlorine. The one-hour average limitation, rather than an instantaneous or daily maximum, will be applied for compliance determinations. A one-hour average limitation allows for continuous monitoring anomalies while protecting aquatic organisms against toxicity.

##### *Biochemical Oxygen Demand (BOD), Total Suspended Solids (TSS) and Coliform*

The beneficial uses of the Pit River from the confluence of the forks to Hat Creek include contact and non-contact recreational uses and irrigation. To protect these beneficial uses, the Central Valley Water Board finds that the wastewater must be disinfected and adequately treated to prevent disease. The California Department of Health Services (DHS) has developed reclamation criteria,

California Code of Regulations, Title 22, Division 4, Chapter 3, (Title 22) for the reuse of wastewater. Title 22 does not apply directly to surface waters, however, DHS has provided guidance and recommendations for treatment and disinfection of domestic wastewater discharged to surface waters in two letters to the Central Valley Water Board dated 8 April 1999 and 1 July, 2003. When dilution of effluent in the receiving stream is less than 20:1, and the beneficial uses of the stream include contact recreation or irrigation of vegetables and fruits where the wastewater may come in contact with the vegetables and fruits, DHS recommends that the effluent be oxidized, coagulated, filtered and disinfected. It is further recommended that the effluent does not exceed an MPN of 2.2 per 100 milliliters for the last seven days for which analyses have been completed or 23 per 100 milliliters in more than one sample in any 30-day period. When dilution of effluent in the receiving stream is greater than 20:1 a secondary, 23 MPN discharge is acceptable. This Permit implements the DHS recommendations. While filtration is not required to meet the definition of disinfected secondary-2.2 recycled water, it may be necessary for the Discharger to filter effluent to meet the coliform limitations specified for this class of recycled water. The coliform limitations in the previous Permit are considerably less stringent than those recommended by DHS and therefore more stringent limits would be impossible for the Discharger to meet with the existing plant. For this reason the Discharger will be given until **15 November 2008**, one year after the required completion date for plant upgrades, to comply with the final coliform and turbidity limits in this Permit.

In accordance with 40 CFR 122.45, mass limitations for BOD and TSS, based on the facility's design flow of 0.5 mgd, are included in the permit to prevent dilution as a means of complying with concentration based effluent limitations.

#### *Settleable Solids*

The existing permit contains monthly average and daily maximum settleable solids limits of 0.1 mL/L and 0.2 mL/L, respectively. These limits have been retained in this Permit.

#### *pH*

The Basin Plan provides that the pH of surface waters shall not be depressed below 6.5 nor raised above 8.5 nor shall the discharge alter pH of the receiving water more than 0.5 units. Federal regulations at 40 CFR 133.102(c) describes the minimum level of effluent quality to be attained by secondary treatment facilities for pH to be within 6.0 and 9.0 units. This Order requires the pH of the effluent to be maintained within the limits of 6.5 and 8.5 pH units. This is consistent with the previous permit.

#### *Time Schedule*

A number of previous analytical results for effluent copper, zinc and total coliform (MPN) are greater than the effluent limits in this Permit and it is likely that the Discharger will be in violation of these limits at the time of adoption. In accordance with the SIP and the California Water Code a compliance schedule has been included in this Permit which requires the Discharger to achieve compliance with the copper and zinc limits by **18 May 2010** and compliance with the coliform and turbidity limits by **15 November 2008**. The improvements necessary for compliance with these

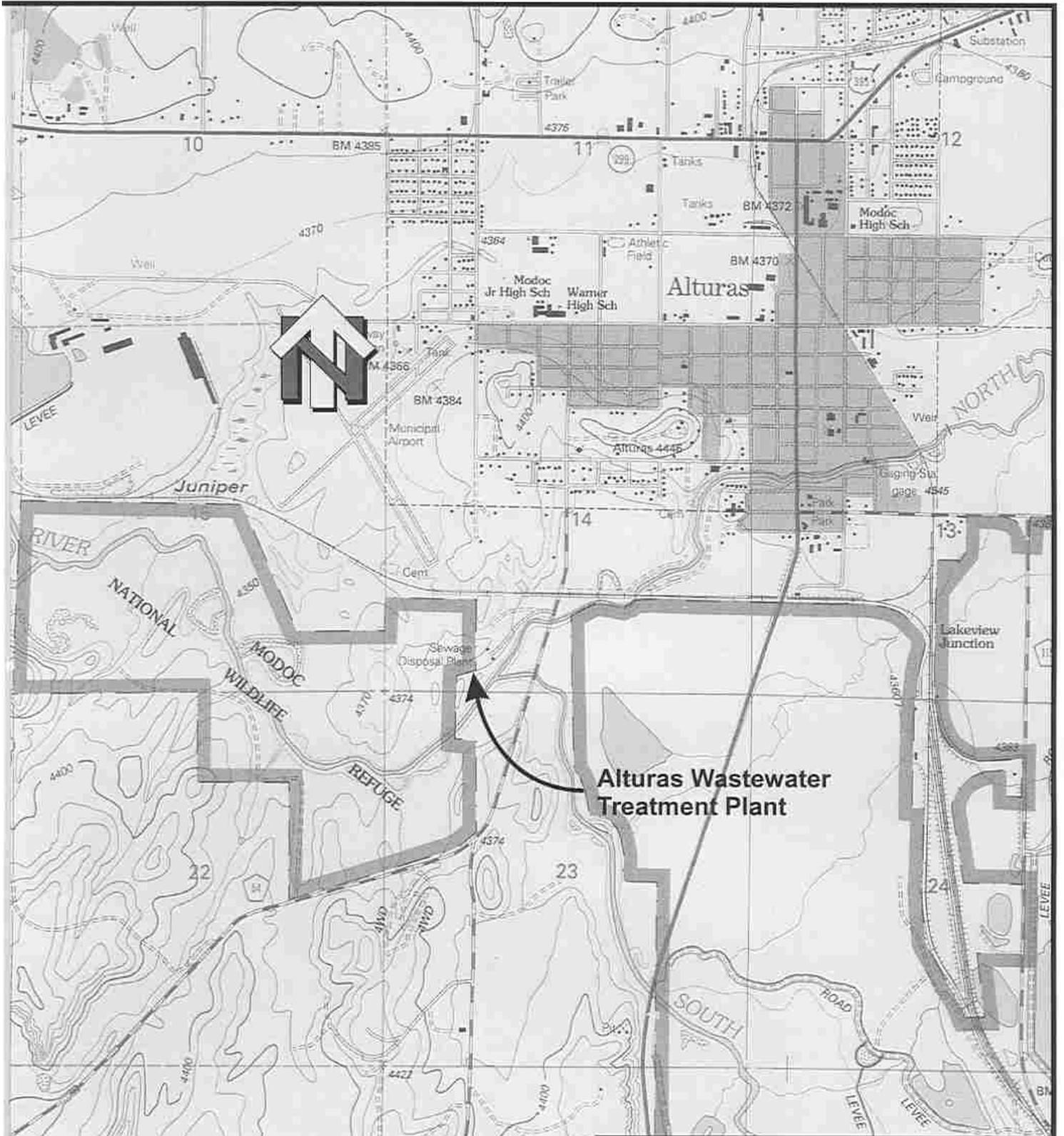
limits have been designed and will be constructed in 2007. The Discharger is required to complete the construction of these improvements by **15 November 2007**.

### **MONITORING AND REPORTING**

Section 308 of the CWA and USEPA regulation 40 CFR 122.44 (i) require monitoring in permits to determine compliance with effluent limitations. Monitoring may also be required to gather data for future effluent limitations or to monitor effluent impacts on receiving water quality. The Discharger is responsible for conducting monitoring and for reporting the results to the USEPA using Discharge Monitoring Reports. The self-monitoring program requires monitoring of receiving water, influent and effluent, storm water, and sludge.

The Monitoring and Reporting Program retains influent monitoring for BOD and suspended solids to allow determination of removal efficiencies for these wastewater characteristics through treatment steps. Receiving water sampling stations and monitoring requirements are also retained from Order No. 5-00-123, however this Order includes a requirement for sampling and analysis of the CTR pollutants in effluent and receiving water.

Effluent monitoring requirements for flow, pH, chlorine, total suspended solids, BOD<sub>5</sub>, coliform bacteria, and chronic toxicity are retained from Order No. 5-00-123. Acute and chronic toxicity testing are required to determine compliance with receiving water narrative objective for toxicity. Monitoring for CTR pollutants in effluent and receiving water is required one year after the scheduled plant improvements are operational. Quarterly effluent and receiving water monitoring for total and dissolved copper and zinc, and hardness is also required.



**CITY OF ALTURAS  
WASTEWATER TREATMENT PLANT  
MODOC COUNTY**

Section 14, T42N, R12E, MDB&M  
Alturas  
USGS 7.5' Quad

Scale: 1 inch = 2,000 feet (approximatley)